



Exchange Adapter Technical Whitepaper

Understanding Kayxo Exchange Adapter for BizTalk Server 2006/2009

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Exchange Adapter Technical Whitepaper Abstract

This paper introduces the latest release of the Kayxo Exchange Adapter for BizTalk Server 2006/2009, providing the technical user with a detailed description of the ways it can be used to define business processes, and to manage and monitor them across the organization. This paper also helps business users understand how they can use BizTalk's powerful capabilities in order to understand and optimize both internal and business-to-business processes.

E-mail is the primary vehicle for interaction between business processes and humans. BizTalk Server 2006 provides the following Adapters to interact with email information:

- POP3: Enables the reception of messages from a POP3 mailbox into BizTalk Server using the POP3 protocol.
- SMTP: Enables users to send messages between BizTalk Server and an SMTP gateway using Simple Mail Transfer Protocol (SMTP).

However, none of these has been designed to interact with the richness of the information stored in Exchange Server. It is possible to implement solutions that integrate Exchange Server using the POP3 Adapter, but this Adapter has been created to work with the POP3 protocol, that is why it lacks the necessary flexibility to interact with the great number of objects and attributes that the Exchange Server has to offer: Tasks, Calendars, Notes, Emails, and Contacts.

The same limitations arise using the SMTP adapter when it comes to integrating with rich Exchange objects. Tasks, Contacts and Appointments are powerful objects that could integrate deeply into business processes, but are left completely out of the equation.

The Kayxo Exchange Adapter for BizTalk Server 2006/2009 provides a transparent bridge to selectively capture and manipulate any kind of information going through the Exchange Server, making it available to the BizTalk Server to exploit all its richness into the company's core systems.

Prerequisites, Skills and Knowledge

A developer of BizTalk solutions must be at least moderately experienced with the use of:

- Microsoft Visual Studio 2008 and the development of .NET solutions.
- Programming with the .NET Framework.
- Extensible Markup Language (XML).
- Extensible Stylesheet Language Transformations (XSLT).
- XML Schema Definition Language (XSD).

An IT Professional must be at least moderately experienced with the use of the following:

- Microsoft Windows Installer (MSI).
- Windows Server 2003 SP 2 / Windows Server 2008.
- SQL Server.
- Exchange Server.
- Performance monitoring and optimization techniques.

Requirements

In order to be installed, the Kayxo Exchange Adapter for BizTalk Server requires the following:

- Windows Server 2003 SP2 / Windows Server 2008.
- Exchange Server 2003 or 2007.
- BizTalk Server 2006 / 2009.
- MAPI Client (MS Outlook or the stand alone MAPI Libraries).
- .Net Framework 2.0.

What Kayxo Exchange Adapter Provides

- Support for Exchange Server 2003 / 2007.
- Simplified programming environment, integrated with Visual Studio 2008.
- Simplified configuration environment, integrated with BizTalk Server and Visual Studio 2008.
- Real-time access to any Exchange items on demand.
- Real-time creation and manipulation of Exchange items.
- Integrated performance counters, manageable from the Operative System's Performance Monitor.
- Minimum security requirements: the security requirements to access the Exchange Server are the same to any Outlook client may need. There is no need to install a web server or open a new port in the Exchange Server.
- Fastest access to Exchange Server objects information (through MAPI).
- Access to any kind of exchange objects and any kind of object property.

Solution Scenarios

As shown in Figure 1, the Kayxo Adapter for Exchange Server can be used to make some processes or workflows automatic, and also those processes that require human intervention using, for instance, Outlook as user interface. Some examples of those scenarios can be:

- Automatic Processes regarding claims or HelpDesk queries.
- A time management system for billable hours through the appointments in the calendar.
- Tasks creation upon business events.
- Synchronization of individual contacts with a corporate CRM.
- Setting events, alarms and due dates for Operational Processes in a corporate ERP directly into an employee's Outlook.

These scenarios are extensible for the world outside the company, allowing expanding the range of B2B options that interact with Exchange Server Messaging Services.

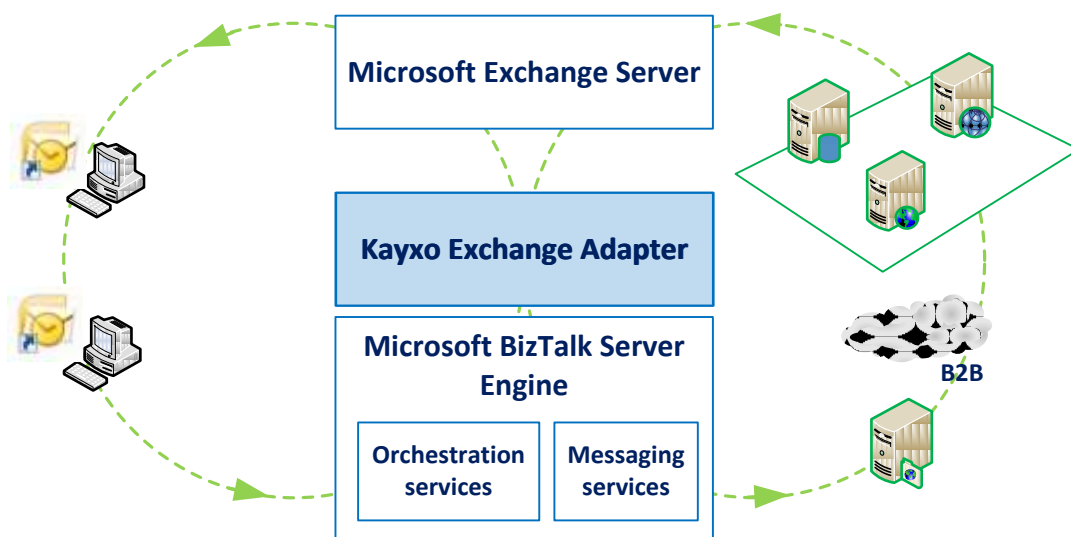


Figure 1

Another possible scenario is the case where the information must be stored in a temporary repository to be later consumed via web applications, win32 or even another service that can display the necessary data according to a specific logic.

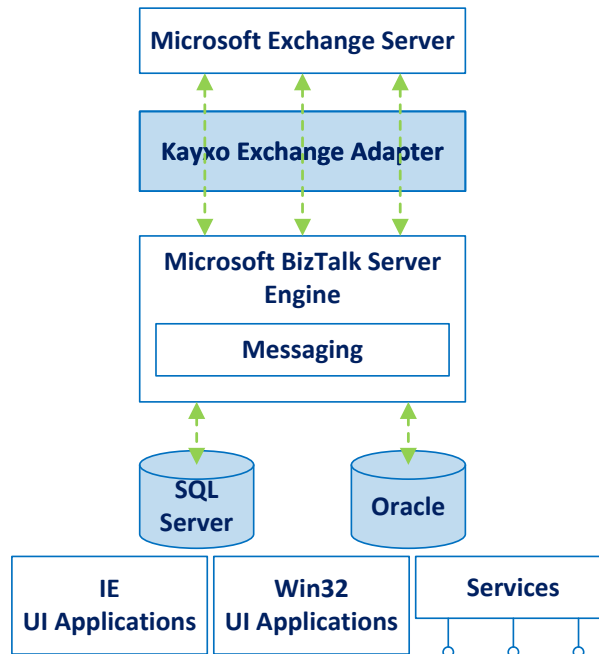


Figure 2

Some relevant scenarios for the use of the messaging stream provided by Exchange are:

- Compliance scenarios where defined email information on particular mailboxes should be retained for later audit purposes.
- Sourcing of unstructured process data (e.g.: support calls and e-mails on a call center) into Business Intelligence systems.
- Capture of attached documents into a corporate Content Management solution, changing the physical attachment location and the attachment reference from Exchange to the Content Management system.
- Integration of third party Corporate Search Engines with Exchange.
- Other scenarios that could involve the Exchange Adapter include the Migration of legacy system data into the Exchange Server.

Receive Adapter

Technical Overview

The Receive adapter allows you to monitor incoming events in a folder. KEAB provides a mechanism to synchronize changes between Exchange Server and the Receive Adapter service. The KEA Synchronization Service retrieves changes from the monitored folders and saves a small key for later retrieval.

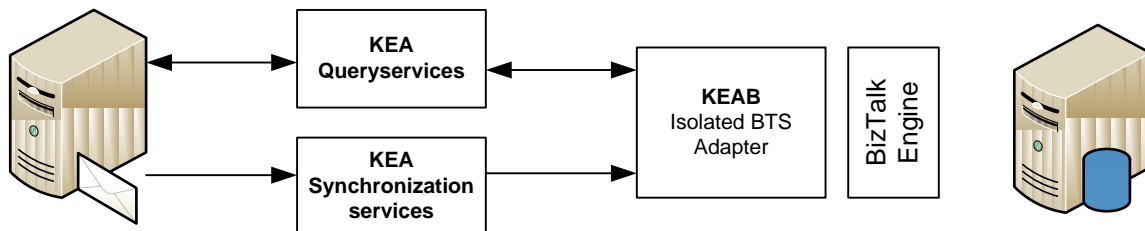


Figure 3

Send Adapter

Technical overview

The Send adapter for BizTalk Server allows users to create, delete and update any kind of messages (mail, contacts, appointments, notes) and sub-folders in Exchange Server.

The Adapter is an In-Process BizTalk Server Adapter, and, therefore runs in the piece of equipment where BizTalk Server is installed. It supports both: the send pattern and the request-response pattern.

The artifact is an In-Process BizTalk Server Adapter (there are no isolated send adapters in BizTalk Server). Once the artifact receives the message, it evaluates this, and based on this information, executes the operation against Exchange; for that specific purpose, BizTalk server assigns the execution of the query to the WriteCore component that is in charge of writing the requested messages through MAPI. The following high level sequence diagram shows the interaction between the components

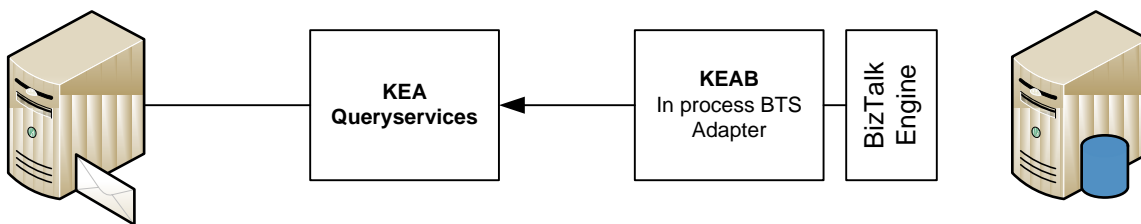


Figure 4

Security

Each adapter component relies on the OS security mechanism, and the administrator can adjust the level of security clearance based on specific requirements. For example, if you have one solution that receives or writes information into a special account (expenses, invoices, etc.) you could change the account of the “Kayxo Exchange Adapter for BizTalk” Windows service or its privileges to access this particular mailbox. This service is the host of the Isolated BizTalk server adapter and will hold the credentials that will be used against the Exchange Server. Since the Kayxo Exchange Adapter retrieves data in the same way that an Outlook client does (through MAPI), no administrative rights on the Exchange Server are necessary.

Load Balancing & Failover

As a High Quality product, KEAB supports scenarios for Enterprise solutions through BizTalk server. The overall schema of a Load Balanced scenario is the same than the simplest scenario that was mentioned early in this document. The main difference resides inside the BizTalk configuration where the Load Balance really occurs.

In the case of the Receive Adapter, when a new item is synchronized by KEAB, a message is left in the BizTalk Message Box. Is in this moment when only one BizTalk server of the group is chosen to process the content of the message.

In the case of the Send Adapter, the process is similar. After a new "Write message" is left in the BizTalk Message Box, only one BizTalk server of the group picks up the message and writes it in Exchange.

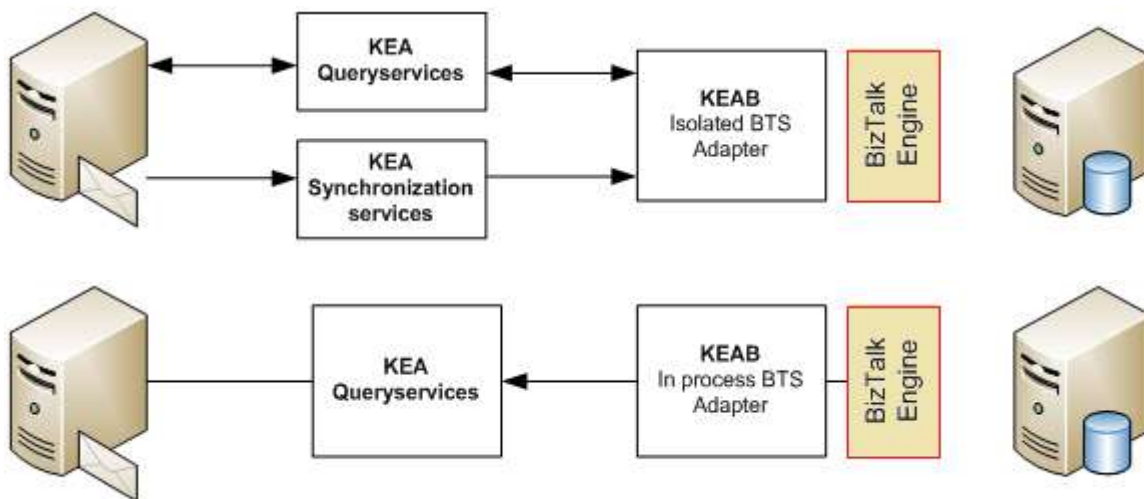


Figure 5

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 Microsoft Outlook is a registered trademark of Microsoft Corporation in the United States and/or other countries.*